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hering to its abdomen. As the bee advances upward toward the tube of the calyx, he treads upon the inflated sacks at the base of the anthers, which yield to the pressure and, acting like a bellows, force through the minute pore a jet of the minuter pollen directly upon the rear or side of the intruder, but directly away from the stigma. I have seen an humble-bee upon a flower, pressing with his feet on the bellows, but, of course, could not get near enough to see the play of the pollen. It may easily be seen, however, by touching the bellows with a blunt point, when a surprising quantity of pollen will be thrown upon the instrument. A sharp point, like that of a pin, would be apt to perforate and spoil the delicate bellows. When touched in this way, it will be noticed that simultaneously with the jet of pollen the anther springs forward as if to aid the expulsive force, and then immediately springs back. In fact, my first impression was that it was this jerk which discharged the pollen. It is easily accounted for by the disposition of the parts as I have described them. The spur of the connective seems to act as a buttress to keep the anther in its tilted position.

It is evident that here is a very perfect contrivance for securing cross-fertilization, at least to a considerable extent. Though each plant of *Rhexia* produces a number of flowers, yet only one or two are usually in bloom at the same time, and these probably in different stages of advancement. The petals, which are the signals inviting insects, last but for a day or perhaps even a shorter time.

There are other points in the structure of *Rhexia*; the glandular hairs on the petals as well as other parts of the plant; the wing-angled stems, etc., which would repay study, if one had the plants accessible. For some of these observations I am indebted to my associate, Mr. Gerard.

In the case of *Cassia Marilandica*, I have watched an humble-bee hugging an anther, and apparently, so to speak, milking out the pollen.

W. H. L.

§ 97. **The Herbaria and Botanical Libraries of the United States. VIII.**—The HERBARIUM OF CORNELL UNIVERSITY numbers not far from 18,000 species. The larger part of the collection is made up of the herbarium of the late Horace Mann, Jr., which was purchased by President White and presented to the University soon after its opening in 1868. This is a general collection, but is especially rich in Sandwich Island plants. The principal additions since made include the Brazilian plants collected by the officers and students of the University in their expedition to South America in 1870; the Western United States plants collected in connection with the Government surveys of the Western Territories; small collections, some of them European, donated from various sources; and a very nearly complete collection of the plants growing in Central New York, comprising especially the flora of Cayuga Lake Valley. A full set of the latter, numbering about 1,300 species of phaenogamia and vascular cryptogamia, and known as the "local herbarium," is kept separate from the main collection for the convenience of students making a somewhat careful study of the whole or of some group of the local

flora. There is also a nearly complete set of N. A. Atlantic coast sea-weeds, and above a thousand species of fungi.

In addition, the University has a somewhat extensive collection of woods, fruits, seeds, fibres, and various commercial, medicinal and economic vegetable products.

Ithaca, N. Y.

A. N. PRENTISS.

§ 98. **Aspidium Lonchitis**, Sw., in Colorado.—Mr. T. S. Brandegee has recently found this fern in a damp sand-stone canyon in the Elk Mountains of Colorado, at an elevation of 9,800 feet. Dr. Parry and others had previously collected it in Utah, but we are not aware that it has been seen in Colorado till now. *Aspidium Filix-mas* and *Pellaea gracilis*, already known to the Colorado flora, also exist near the same locality.

Philadelphia, Pa.

J. H. R.

§ 99. **The Popular Names of Plants**.—Dr. Gray, in a notice, last year, of the third edition of Dr. Prior's interesting work "On the Popular Names of British Plants," remarked: "What we here need is a supplement to Dr. Prior's volume, recording the changes which have occurred in the application of English popular names to North American plants, and giving the history and application of our indigenous plant-names." It seems to us that there is no better time than the present to begin the collection of material for such a supplement. We have already gathered from various sources a large number of popular names by which our native plants are, and have been known; but there are one or two points on which we need information that can only be obtained by the kind co-operation of the readers of the BULLETIN. We should like to find out, for instance, to what extent the English names applied to our plants in botanical manuals are mere book-names, and to what extent, and *where* they are in use among those who have no knowledge of Botany. We wish to ascertain, too, where many of the popular names that we have collected are at present in use. We know of no other way to obtain such information than to ask our readers to aid us by collecting lists of the popular names by which our plants are known in their neighborhood and sending them to us from time to time when convenient. When sufficient material has been collected the BULLETIN will publish it. It would be of interest, too, to put on record the names by which our plants are known to the aborigines, and we should like information on that point also, with the etymology of the names wherever obtainable. A hearty response to a request like this made through the columns of the *Science Gossip*, a few years ago, has enabled Messrs. Britten and Holland to compile an exceedingly interesting "Dictionary of English Plant-Names,"* which has now reached its second part, ending with the letter O. It is hardly necessary to say that, to make them of value for our purposes, the popular names should be accompanied by their scientific equivalents.

W. R. G.

* *A Dictionary of English Plant-Names*. By James Britten, F.L.S., and Robert Holland. Part I, 1878: Part II, 1879. London, Trübner & Co.